



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,613	09/29/2003	Murray W. Mahoney	02RSC064	2554
44859	7590	10/14/2005	EXAMINER	
JOHN J. DEINKEN 1049 CAMINO DOS RIOS P. O. BOX 1085 THOUSAND OAKS, CA 91358-0085			HUNTER, ALVIN A	
			ART UNIT	PAPER NUMBER
			3711	

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,613

Applicant(s)

MAHONEY, MURRAY W.

Examiner

Alvin A. Hunter

Art Unit

3711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 23 requires the metallic region to be no more than 3mm thick; however the specification only provides enablement for the thickness to be 1 to 3mm. Claim 23 implies that the thickness can be thinner than 1mm; therefore, claim 23 has been rejected.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 recites "wherein the tendency for wear on the face to be reduced in the sweet spot, relative to other portions of the face, provides a long term indicator of a golfer's performance." It is unclear as to what is being conveyed in claim 25. Clarity to the claim needed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (USPN 5024437) in view of Thomas et al. (USPN 5460317) and Igarashi (USPN 5437088).

Regarding claims 1, 8, 14, 16, and 18, Anderson discloses club head wherein the club head is fabricated with a metallic face and the face is welded thereon (See Entire Document). Though not explicitly disclosed, one having ordinary skill in the art is aware that after welding the workpiece is machined to remove the flashes formed during the welding in order to smoothen out the surface. Anderson does not disclose the type of welding process used or how the grooves shown in Figure 5 are fabricated. Thomas discloses a friction stir welding process in which reduces oxidation (See Abstract). One having ordinary skill in the art would have found it obvious to friction stir weld the face onto the club head, as taught by Thomas et al., in order to reduce the oxidation of the workpiece. In order to join the two members, the material has to be heated and then it is cooled in which the heat and cooling combination would change the grain structure of the material joining the two members. Based on the above, it is submitted that the friction stir process disclosed by Thomas would inherently create local fine grain microstructures. Igarashi discloses a club face in which has been resurfaced to provide

Art Unit: 3711

a surface topology to enhance backspin and reduce sidespin (See Abstract). One having ordinary skill in the art would have found it obvious to resurface the clubface, as taught by Igarashi, in order to optimize the spin of the golf ball.

Regarding claims 2 and 9, Anderson discloses the club head comprising titanium copper, or aluminum (See Abstract).

Regarding claims 3 and 11, Anderson discloses the clubhead being casted and/or forged (See Column 2, lines 21 through 62).

Regarding claims 4 and 12, Thomas et al. discloses the friction stir welding being performed on an aluminum alloy at 800 to 1500 rpm using a FSP (See Column 4, lines 50 through 64).

Regarding claims 5 and 13, Thomas et al. discloses the friction stir welding being performed at 190 to 370 mm/minute using a FSP tool (See Column 4, lines 50 through 64).

Regarding claim 6, Igarashi discloses the resurfacing step including milling (See Abstract).

Regarding claims 7 and 17, Igarashi et al. discloses the desired surface topology including at least one groove (See Abstract).

Regarding claim 10. Anderson shows the metal workpiece being a plate (See Figure 3).

Regarding claim 15, Applicant does not disclose why it is critical for the resurfacing process to be performed before the fabrication process in order to attain the

Art Unit: 3711

invention. One having ordinary skill in the art would have concluded that the resurfacing process could be performed at anytime so long as the face has the topology desired by the user.

Regarding claim 20, Thomas discloses the friction stir processed metallic region being harder than the other portions of the head.

Regarding claim 21, Thomas discloses the friction stir processed metallic region exhibits fewer voids and defects than the other portions of the head.

Regarding claim 22, Thomas discloses the friction stir processed metallic region is more resistant to wear than the other portions of the head.

Regarding claim 23, Anderson does not disclose the thickness of the materials. Thomas discloses the friction welding process being used on materials having varying thickness. In one particular example the sheets being joined are approximately 3mm (See Column 4, lines 50 through 64). One having ordinary skill in the art would have found it obvious to apply the process to materials of any thickness, even 3mm, in order to join two materials and to reduce oxidation.

Regarding claim 24, the combination of Anderson in view of Thomas and Igarashi teaches the friction stir processed metallic region being related to the sweet spot for the head being that it is the face plate that is being welded.

Regarding claim 25, Anderson shows in figures 1, 2, and 4 areas outside of the weld joint which constitute the part of the face of the club head. It should also be noted that the applicant does not define what constitutes the sweet spot; therefore, it is

Art Unit: 3711

submitted, in combination with Thomas and Igarashi, that the points in which the weld joints are located have reduced wear than the other parts of the face.

Response to Arguments

Applicant's arguments filed 4/14/05 have been fully considered but they are not persuasive. Applicant argues that Thomas does not teach the advantages of friction stir welding and does not teach friction stir processing. The examiner disagrees.

Friction stir processing is known as friction stir welding to those skilled in the art. If in doubt, US Patent 6638381 notes friction stir processing to be friction stir welding (See Background of the Invention) and also links the friction stir welding to altering the grain structure. Thus arguing that friction stir welding is different than friction stir process is not persuasive. Rationale different from the applicant is permissible when establish prima facie obviousness. Just because the combination does not explicitly state what the applicant is trying to achieve with the invention do not negate the invention from being prima facie obvious. For this reason, the above office action has been furnished.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Keener et al. (USPN 6638381).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alvin A. Hunter whose telephone number is (571) 272-4411. The examiner can normally be reached on Monday through Friday from 7:30AM to 4:00PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Vidovich, can be reached on 571-272-4415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/673,613

Page 8

Art Unit: 3711

AAH

Alvin A. Hunter, Jr.

Eugene Kim

EUGENE KIM
PRIMARY EXAMINER